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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference X-16757	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, Item 5 below.	
International application No. PCT/US2005/000013	International filing date (day/month/year) 10/01/2005	(Earliest) Priority Date (day/month/year) 12/01/2004
Applicant APPLIED MOLECULAR EVOLUTION, INC.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 9 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☒ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☒ Certain claims were found unsearchable (See Box II).

3. ☒ Unity of invention is lacking (see Box III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
- a. type of material
- ☒ a sequence listing
- ☐ table(s) related to the sequence listing
- b. format of material
- ☒ in written format
- ☒ in computer readable form
- c. time of filing/furnishing
- ☒ contained in the international application as filed
- ☒ filed together with the international application in computer readable form
- ☐ furnished subsequently to this Authority for the purpose of search
2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C07K16/00, A61K39/395

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C07K A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, MEDLINE, WPI Data, PAJ, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	✓ WO 88/07089 A (MEDICAL RESEARCH COUNCIL) 22 September 1988 (1988-09-22) abstract; table 2	1-16, 19
X	✓ WO 94/29351 A (CELLTECH LIMITED; MORGAN, SUSAN, ADRIENNE; EMTAGE, JOHN, SPENCER; BODM) 22 December 1994 (1994-12-22) abstract	1-16, 19
X	✓ EP 0 227 110 A (TEIJIN LIMITED) 1 July 1987 (1987-07-01) abstract	1-16, 19
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *S* document member of the same patent family

Date of the actual completion of the international search

28 April 2005

Date of mailing of the international search report

06/06/2005

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	✓ WOLFENSTEIN-TODEL C ET AL: "THE AMINO-ACID SEQUENCE OF HEAVY CHAIN DISEASE PROTEIN ZUC STRUCTURE OF THE FC FRAGMENT OF IMMUNO GLOBULIN G-3" BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, vol. 71, no. 4, 1976, pages 907-914, XP009046941 ISSN: 0006-291X abstract; figure 2a	1-16,19
X	✓ WO 92/16562 A (LYNXVALE LIMITED) 1 October 1992 (1992-10-01) abstract	1-16,19
X	✓ US 2004/002587 A1 (WATKINS JEFFRY D ET AL) 1 January 2004 (2004-01-01) claims 1,8,9; example 4	1-16,19
X	✓ US 6 277 375 B1 (WARD ELIZABETH SALLY) 21 August 2001 (2001-08-21) claim 1	1-16,19
P,X	✓ WO 2004/063351 A (MACROGENICS, INC; STAVENHAGEN, JEFFREY; VIJH, SUJATA) 29 July 2004 (2004-07-29) paragraphs '0111! - '0113!; claim 1; table 5	1-16,19

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 17,18

Claims 17 and 18 refer to a sequence according to Seq. ID No. 57 and 58. However, neither the electronic nor the paper version of the sequence listing comprise said sequences. The last Seq. ID No. in the sequence listing is 56. Hence, claims 17 and 18 do not comply with the requirements of Rule 13ter PCT. Furthermore, neither from the claims nor from the description the subject-matter of said claims can be deduced. Therefore, the subject-matter of the claims is not sufficiently disclosed and so unclear, that no search can be performed (Articles 5 and 6 PCT).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 17, 18
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-19 (all claims partially)

an antibody or a portion thereof comprising a human Fc region, wherein in said human Fc region at least the amino acid at position 247 has been substituted and the corresponding pharmaceutical compositions.

2. claims: 1-19 (all claims partially)

an antibody or a portion thereof comprising a human Fc region, wherein in said human Fc region at least the amino acid at position 251 has been substituted and the corresponding pharmaceutical compositions.

3. claims: 1-19 (all claims partially)

an antibody or a portion thereof comprising a human Fc region, wherein in said human Fc region at least the amino acid at position 256 has been substituted and the corresponding pharmaceutical compositions.

4. claims: 1-19 (all claims partially)

an antibody or a portion thereof comprising a human Fc region, wherein in said human Fc region at least the amino acid at position 268 has been substituted and the corresponding pharmaceutical compositions.

5. claims: 1-19 (all claims partially)

an antibody or a portion thereof comprising a human Fc region, wherein in said human Fc region at least the amino acid at position 280 has been substituted and the corresponding pharmaceutical compositions.

6. claims: 1-19 (all claims partially)

an antibody or a portion thereof comprising a human Fc region, wherein in said human Fc region at least the amino acid at position 330 has been substituted and the corresponding pharmaceutical compositions.

7. claims: 1-19 (all claims partially)

FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

an antibody or a portion thereof comprising a human Fc region, wherein in said human Fc region at least the amino acid at position 332 has been substituted and the corresponding pharmaceutical compositions.

8. claims: 1-19 (all claims partially)

an antibody or a portion thereof comprising a human Fc region, wherein in said human Fc region at least the amino acid at position 339 has been substituted and the corresponding pharmaceutical compositions.

9. claims: 1-19 (all claims partially)

an antibody or a portion thereof comprising a human Fc region, wherein in said human Fc region at least the amino acid at position 378 has been substituted and the corresponding pharmaceutical compositions.

10. claims: 1-19 (all claims partially)

an antibody or a portion thereof comprising a human Fc region, wherein in said human Fc region at least the amino acid at position 440 has been substituted and the corresponding pharmaceutical compositions.

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Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 8807089	A	22-09-1988	AT 94171 T	15-09-1993
			AU 600575 B2	16-08-1990
			AU 1480388 A	10-10-1988
			DE 3883899 D1	14-10-1993
			DE 3883899 T2	31-03-1994
			EP 0307434 A1	22-03-1989
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			WO 8807089 A1	22-09-1988
			WO 8807054 A1	22-09-1988
			GB 2209757 A , B	24-05-1989
			JP 1502875 T	05-10-1989
			JP 3101690 B2	23-10-2000
			US 5648260 A	15-07-1997
			US 5624821 A	29-04-1997
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			AU 691811 B2	28-05-1998
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			CA 2163344 A1	22-12-1994
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			DE 69429095 D1	20-12-2001
			DE 69429095 T2	12-09-2002
			EP 0714409 A1	05-06-1996
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			WO 9429451 A2	22-12-1994
			JP 8511420 T	03-12-1996
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			DE 3682882 D1	23-01-1992
			EP 0227110 A2	01-07-1987
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			EP 0575407 A1	29-12-1993
			WO 9216562 A1	01-10-1992
			JP 6510659 T	01-12-1994
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			US 2005064514 A1	24-03-2005
			WO 2004063351 A2	29-07-2004

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